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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/569,079

12/04/2006

Kenneth Hillel Peter Harris

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EXAMINER

BARCENA, CARLOS

ART UNIT

PAPER NUMBER

1728

NOTIFICATION DATE

DELIVERY MODE

04/12/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/569,079	HARRIS, KENNETH HILLEL PETER	
	Examiner	Art Unit	
	Carlos Barcena	1728	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,9 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,9,16-18,21,and 22 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. The amendment filed 03/22/2011 has been entered. Claims 1, 3, 9, and 16-22 remain pending. Claims 21 and 22 are new.
2. The previous 35 USC 112 rejection of claims 3 and 9 is withdrawn in light of Applicant's amendment to claims 3 and 9.
3. Applicant's arguments have been fully considered but they are not persuasive. All previous art rejection are maintained and reiterated below. See Response to Arguments.

Prior Art Rejection

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. **Claims 1, 3 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubo et al. (5,298,200).**

Regarding claim 1, Kubo discloses dental refractory model materials comprising as powdery components:

- a colloidal silica dispersion (sol);
- a mineral including trivalent or tetravalent cations (e.g. alumina, zirconia, mullite, cordierite);
- 5 to 20 wt.% of a soluble phosphate (salt) (abstract), specifically monoammonium phosphate (Table 1).

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A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claims 3 and 17, Kubo discloses mullite (aluminum silicate) (abstract) with aluminum being trivalent.

Prior Art Rejection

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (5,298,200) in view of Guerra et al. (5,677,371).

Regarding claim 16, Kubo teaches a silica sol. Kubo does not teach an alumina sol.

Guerra teaches a slurry for the producing investment casting shell-molds comprising a colloidal sol selected from the group consisting of silica sol, zirconia sol, alumina sol, and yttria sol (col. 18, lines 53-55).

It would have been obvious to one of ordinary skill in the art at the time of invention to substitute one known element (e.g. alumina sol) for another (e.g. silica sol) which yield predictable results to one of ordinary skill in the art as shown by Guerra. The motivation to combine Kubo and Guerra can be found in Guerra who states investment casting is a known technique for dental castings (col. 1, lines 46-54).

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8. Claims 9, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (5,298,200) in view of Yates (3,650,783) and Guerra et al. (5,677,371).

Regarding claims 9 and 21, Kubo teaches monoammonium phosphate (Table 1).

Kubo does not teach an alkali phosphate or sodium or potassium hypophosphite.

Yates, directed to investment casting molds comprising trivalent metal phosphate coated colloidal silica molding powders, teaches sources of soluble phosphate salts include sodium phosphate (i.e. Na_3PO_4), potassium phosphate, ammonium phosphate and their acid salts such as sodium dihydrogen phosphate and sodium monohydrogen phosphate (col. 2, lines 42-46).

It would have been obvious to one of ordinary skill in the art at the time of invention to substitute one known element (e.g. an alkali phosphate) for another (e.g. ammonium phosphate) which yield predictable results to one of ordinary skill in the art as shown by Yates motivated by Guerra who states investment casting is a known technique for dental castings (col. 1, lines 46-54).

Regarding claim 18, Kubo teaches mullite (aluminum silicate) (abstract).

New Art Rejection

Claim Rejections - 35 USC § 103

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodson (2003/0005860).

Regarding claim 22, Goodson teaches a method for making improved ceramic cement wherein the second (discrete) phase consists essentially consists of:

- seed crystals having controlled sizes (abstract), wherein the crystals are selected from iron oxide (ferruginous mineral) (claim 20); and

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- a nutrient field of equal parts A and B, wherein
 - A is an aqueous suspension of colloidal silica (claim 20); and
 - B is aqueous sodium phosphate (i.e. Na_3PO_4) (claim 20).

Together, the compounds would make a stable slurry. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Previously Indicated Allowable Subject Matter

10. Claims 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant argues in the presence of stabilizers, in particular Na_3PO_4 , ferric ions are converted to inactive ferric phosphate (Remarks p. 6, lines 12-17). In response it is noted that the features upon which applicant relies (i.e., Na_3PO_4 and ferric ions) are not recited in the rejected claim 1. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 1 broadly requires tri- and tetravalent cations and a water soluble salt disclosed by Kubo et al. (5,298,200), as presented by Examiner. Nonetheless, these limitations have been addressed at least per claims 3, 21, 17, and 18. Similarly, Applicant argues

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the water soluble salt (i.e., Na_3PO_4) is typically less than 1% (Remarks, p. 6, lines 18-20). Claim 1 recites at least 0.01 wt.%, which is open ended.

12. Applicant argues the recited components in Kubo are unsuited for the present purpose of the application. In response, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Barcena whose telephone number is (571) 270-5780. The examiner can normally be reached on Monday through Thursday 8AM - 5PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Michener can be reached on (571) 272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer K. Michener/
Supervisory Patent Examiner, Art Unit 1728

/Carlos Barcena/
Examiner, Art Unit 1728